CHASER (Continued)

(Continued)

3. Compressed air

4. Hydraulic piping

3.6 Design, detail, furnish, fabricate, erect and paint all pipe supports.

3.7 Furnish and install insulation for all pipe, valves and fittings, where required.

3.8 Furnish a single source of 480 volt, 60 Hertz, 3 phase AC power for operating the system. All other voltages required for operating the system shall be Contractor's responsibility.

3.9 Furnish and install complete lighting system for the building.

3.10 Furnish and install a complete grounding system for all equipment furnished by Contractor and the building.

3.11 Start up and place the entire thickener-press filter system in satisfactory operation.

## 4. ENGINEERING DATA

### 4.1 FUNCTIONAL REQUIREMENTS

1. The objective is to produce a filter cake with approximately 46 percent moisture.

2. Filter cake shall freely discharge from filter when the frames are opened.

3. Press filter shall perform without precoating of any type.

4. The process shall be completely automated with provisions for operator override to include all operations in the cycle. An operator's control panel shall be furnished so that the entire thickener-filter press facility may be placed into operation from this panel.

### 4.2 SLURRY TO BE PROCESSED

1. 85 gallons per minute of slurry water shall be processed and recycled.

2. Slurry water shall have a concentration of 20 gm/L of solids consisting of the following:

| | |
|---|---|
| $CaCO_3$ | - 84.9% |
| MgOH | - 11.1% |
| $SiO_2$ | - 1.1% |
| AlOH | - 1.6% |
| Miscellaneous | - 1.3% |

3. Maximum temperature shall be 185°F.

QUIPMENT REQUIREMENTS

Equipment to be furnished under this Specification shall include a complete press filtering dewatering system, commencing with a thickener-holding tank and terminating with a filter press.

4.4 SLURRY THICKENER-HOLDING TANK AND THICKENER MECHANISM

1. The thickener and holding tank shall be in accordance with the following:

    1. Overall diameter 24'-0"

    2. Centerwell diameter 10'-0"

    3. Sidewall height 18'-0"

    4. Sizing of thickener and holding tank based on the following:

        1. DELETED

        2. Sludge storage volume - 30,600 gallons (one-day supply)

        3. Thickener volume - 30,600 gallons (6-hour retention time)
        Total capacity - 61,200 gallons

    5. Thickener-holding tank design - one (1) vessel in accordance with the following:

        1. All steel construction including bottom

        2. Vessel design shall include reinforcing structural steel and steel legs so that vessel can be installed above grade.

        3. Overall height of the tank shall be determined by the Contractor, with the consideration that the underflow from the tank will be piped aboveground by the Purchaser to the underflow pumps. (See Item 2.4.3)

SLURRY THICKENER-HOLDING TANK AND THICKENER-MECHANISM (Continued)

2. Thickener-Mechanism Arrangement

The following directs attention to certain required features of the thickener-mechanism but does not purport to cover all details entering into its design and construction. Nevertheless, Contractor shall furnish the thickener-mechanism complete in all details.

1. The thickener-mechanism shall consist of the following major components:

    1. Underwater raking mechanism for conveying settled solids to the discharge point

    2. Drive head mechanism for supplying motive power to the unit

    The thickening unit operational design shall basically consist of supplying the motive power from a center mechanism arrangement to rake arms.

2. The thickener-mechanism shall be suitable for easy installation into the circular thickener-holding tank.

3. Overall Design Of Thickener-Mechanism

1. The design of the thickener-mechanism shall be of a bridge support head unit.